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Title:
Perfect score:
                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
       SPTREMBL_21:*

1: sp_archea:*
2: sp_bacteria:
3: sp_fungi:*
4: sp_human:*
5: sp_invertebi:
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebi:
14: sp_unclass:
15: sp_unclass:
16: sp_bacteri:
16: sp_archeap:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             March 12, 2003, 00:07:46; Search time 61 Seconds (without alignments) 3381.199 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      671580 seqs, 206047115 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-046-433-40
5506
1 MAEPGHSHHLSARVRGRTER.....LGRSNHLPPRGLLMDLTQCR 1001
sp_organelle:*
sp_phage:*
sp_plant:*
sp_rodent:*
sp_virus:*
sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                         sp_invertebrate:*
sp_mammal:*
sp_mhc:*
                                                                                                                                                                                                                                            sp_archea:*
sp_bacteria:*
sp_fungi:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                       671580
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARI

| Result No. | Score | Query Match I | Length | DB | ID | Description |
|---------------|--------|------------------|--------|----|--------|--------------------|
| 1 | 2998 | 54.4 | 580 | 4 | Q9P2M2 | Q9p2m2 homo sapien |
| N | 1550 | 28.2 | 493 | 4 | Q96DP2 | Q96dp2 homo sapien |
| ω | 1282 | 23.3 | 300 | 11 | Q8R215 | Q8r215 mus musculu |
| 4 | 1203.5 | 21.9 | 1019 | Ŋ | Q9NA40 | Q9na40 caenorhabdi |
| տ | 230.5 | 4.2 | 3567 | 11 | Q9ES77 | Q9es77 mus musculu |
| 6 | 211 | 3.8 | 709 | ഗ | 097444 | O97444 giardia lam |
| 7 | 208.5 | 3.8 | 719 | 5 | Q9U019 | Q9u019 giardia lam |
| 80 | 208.5 | 3.8 | 1101 | G | Q964D2 | Q964d2 entamoeba h |
| 9 | 207 | 3.8 | 709 | თ | Q9XTJ7 | Q9xtj7 giardia lam |
| 10 | 206 | 3.7 | 1007 | 13 | Q90ZN3 | Q90zn3 gallus gall |
| 11 | 202.5 | 3.7 | 719 | ഗ | Q9U021 | Q9u021 giardia lam |
| 12 | 200.5 | 3.6 | 1316 | 4 | Q96JU7 | Q96ju7 homo sapien |
| 13 | 197.5 | 3.6 | 1045 | ű | Q8T3A6 | Q8t3a6 caenorhabdi |
| 14 | 197.5 | 3.6 | 1070 | ഗ | Q8T3A7 | Q8t3a7 caenorhabdi |
| 15 | 197.5 | 3.6 | 1111 | σ | Q9XWD6 | Q9xwd6 caenorhabdi |
| 16 | 195.5 | 3.6 | 1074 | Çī | Q964D1 | |
| | | | | | | |

| 45 | 44 | 43 | 42 | 41 | 40 | 39 | <u>8</u> | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 |
|--------------------|--------|-------------------|--------------------|--------------------|-------------------|--------|-------------------|--------|--------------------|--------|--------------------|--------|-------------------|--------|--------------------|-------------------|--------------------|---------|--------|--------------------|--------------------|--------------------|---------|--------------------|--------------------|--------------------|--------|-------------------|
| 167.5 | 169 | 169 | 170 | 170 | 170.5 | 170.5 | 171 | 171 | 171.5 | 172 | 172 | 173.5 | 174 | 175 | 177 | 177.5 | 177.5 | 178 | 179 | 181 | 181.5 | 182.5 | 183.5 | 185.5 | 186 | 187 | 188.5 | 195 |
| 3.0 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.2 | 3.2 | | | | 3.2 | | | | ω ω | ω .ω | ω .ω | 3.4 | 3.4 | 3.4 | 3.4 | 3.5 |
| 545 | 1679 | 1376 | 3102 | 2759 | 1324 | 1214 | 4072 | 2447 | 739 | 1372 | 1154 | 1290 | 3396 | 2352 | 557 | 2534 | 1193 | 1274 | 1274 | 667 | 667 | 769 | 1391 | 556 | 704 | 1875 | 1623 | 2112 |
| Ų | Çī | G | Ų | Ģ | σ | 13 | σ | 5 | Ģ | Çī | Ŋ | Ŋ | ر ت | σ | σ | ر. | 13 | σ | Çī | ъ | ر. | σ | ψ | 5 | ა | σı | 5 | Çī |
| Q9GQ44 | Q24301 | Q8SZS2 | Q9TZR4 | 045614 | Q8SYK2 | Q90YD2 | Q9W4Y4 | Q9NEF9 | Q9GS24 | P91526 | Q9GQ46 | Q9VTR8 | Q9VM55 | 061240 | Q24992 | Q8WRD1 | Q90819 | Q24977 | Q9NGL3 | Q9XTK3 | Q95WU1 | Q24971 | Q19021 | Q9NGZ3 | Q9U048 | Q93691 | Q9U3U7 | Q8WPL0 |
| Q9gq44 giardia Lam | _ | Q8szs2 drosophila | Q9tzr4 caenorhabdi | 045614 caenorhabdi | Q8syk2 drosophila | N | Q9w4y4 drosophila | | Q9gs24 giardia lam | | Q9gq46 giardia lam | | Q9vm55 drosophila | | Q24992 giardia lam | Q8wrd1 plasmodium | Q90819 gallus gall | giardia | | Q9xtk3 giardia lam | Q95wul giardia lam | Q24971 giardia lam | _ | Q9ngz3 giardia lam | Q9u048 giardia lam | Q93691 caenorhabdi | _ | Q8wpl0 oikopleura |

ALIGNMENTS

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Best Local S
Matches 272
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                                                                                                                                                                                                                                                              Tashiro H., Yamazaki M., Watanabe K., Kumagai A., Itakura S., Fukuzumi Y., Fujinori Y., Komiyama M., Sugiyama T., Irie R., Otsuki T., Sato H., Wakamatsu A., Ishi S., Yamamoto J., Isono Y., Kawai-Hio Y., Saito K., Nishikawa T., Kimura K., Yamashita H., Matsuo K., Nakamura Y., Sekine M., Kikuchi H., Kanda K., Wagatsuma M., Murakawa K., Kanehori K., Takahashi-Fujii A., Oshima A., Sugiyama A., Kawakami B., Suzuki Y., Sugano S., Nagahari K., Masuho Y., Nagai K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
CDNA FLJ31340 fis, clone MESAN1000035, weakly similar
                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae
                                                                                                                                                                                                                                                                                                                                                                                                                                                 surface-labeled trophozoite antigen
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                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q96DP2;
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                                                                   HSVELNRGNNVLYWRTTAFSVWTKVPKPVLVRNIAITGVAYTSECFPCKPGTYADKQGSS
NCQVCPRNTYSEKGAKECIRCKDDSQFSEEGSSECTERPPCTTKDYFQIHTPCDEEGKTQ
                                                      YQVMLKSGTNILYWRTTGILMGSKAVKPVLVKNITIEGVAYTSECFPCKPGTFSNKPGSF
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                                                                                                            l Similarity
272; Conser
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                                                                                                          Score 1550; DB 4;
Pred. No. 7.3e-118;
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Best Local Similarity
Matches 233; Conserv
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OBR215,

OBR215,

O1-UUN-2002 (TrEMBLrel. 21, Created)

O1-JUN-2002 (TrEMBLrel. 21, Last sequence update)

O1-JUN-2002 (TrEMBLrel. 21, Last annotation update)

O1-JUN-2002 (TrEMBLrel. 21, Last annotation update)

Hypothetical 32.6 kDa protein (Fragment).

Mus musculus (Mouse).

Mus musculus (Mouse).

- " " " " " Metazoa; Chordata; Craniata; Vertebrat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (FEB-2002) to the EMBL; BC022655; AAH22655.1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Strausberg R.;
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     954
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                                                                                                                                                                                                       834
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                                                                                                                                                                                                                                                                                     TLDGITSPAELFHLESLGIPDVIFFYRSNDVTQSCSSGRSTTIRVRCSPQKTVPGSLLLP 833
     DLPAADSCAIMEGEDVEDDLIFTSKNHSLGR
                                                                             LPEQRVTICKTIDFWLKVGISAGTCTAILLTVLTCYFWKKNQKLEYKYSKLVMNATLKDC
                                                                                                                                                                                                                                                                                                                                                               CTDNVTDLRIPDGEAGFSKSVTAYVCQVVIIPSEVMGYKAGVSSQPVSLADRLVGVSTDM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RPCALEASDVGSSCTSCPAGYYIDRDSGTCHSCPPNTILKAHQPYGVQACVPCGPGTKNN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRCPAGTEPAVGFEYKWWNTLPTNMETTVLSGINFEYKGMTGWEVAGDHIYTAAGASDND
                                                                                                                                                          SMCSDGTCDGCNFHFLWESVAACPLCSASDYHTFVSSCVAGIQKTTYMWREPKLCSGGIS
                                                                                                                                                                                                                                                          TLEGIVSPVELFHPETSGIPDIVFFFRSNDVTQSCSSGRSTTIRLRCNPMKAAPGTLRLP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTKEKQAYTHIIFKNATFTFTWAFQRTNQGQDNRRFINDMVKIYSITATNAVDGVASSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YLILNLHIPGFKPPTS-MTGATGSELGRITFVFETLCSADCVLYFMVDINRKSTNVVESW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1282;
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6455109C054B6CB4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 588
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RESULT 4
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Best Local 9
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01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
Y73F8A. 5 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                investigating biology.";
Science 282:2012-2018(1998).
EMBL; AL132862; CAB70224.1; -
InterPro; IPRO02049; Laminin_EGF.
UNKNOWN_1
PROSITE; PS01248; LAMININ_TYPE_EGF; UNKNOWN_1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Caenorhabditis elegans.
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9NA40;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Genome sequence of the nematode C.elegans: A platform for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                   221 MKTTEK-----GWEFHSVELNRGNNVLYWRTTAFSVWTKVPKPVLVRNIAITGVAY 271
                                                                                                                                               383 GYCEFCKKDYFSDGNSCSRCPYDTYPNYGLQYQNWEYLPPKLSTRCEYISEDVATACNIG 442
                                                                                                                                                                                                                     324 VSDYYPVREPC-TNGSSRAVYKKVLPSICRDDLPSATKLPPPTPWKTCPKCNPGMEKNKL 382
                                                                                                                                                                                                                                                                                              265
                                                                                                                                                                                                                                                                                                                             272 TSECFPCKPGTYADKQGSSFCKLCPANSYSNKGETSCHQCDPDKYSEKGSSSCNVRPACT 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         165 YIAFNTDECTATLMYAVNLKQSGTVNFEYYYP--DSSIIFEFFVQNDQCQPNAD--DSRW
499 TSCADESCALYFIEDMSAGIKGQRESFYHFLAAFNGSNSKRVWSHTVTKNTPARFMVAFL 558
                                  503 TLCS-VNCELYEMVGVNSRTNTPVET-----WKGSKGKQSYTYIIEENTTTSFTWAFQ 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        49 CKESEYHYEYTACDSTGSRWRVAVPHTPGLCTSLPDPVKGTECSFSCNAGEFLDMKDQSC 108
                                                                                                                                                                                                                                                                                                                                                                                                                                        ELIYIPTPCVSKLSFSANLVRPGSVEFTYRMPRNNRALSMQVDIRNEQCQSYNDVAKSMF 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RPCNPGFFSLGGGIRYEEFVTLPSGFSVDNMDSNPDAQFSNRQSQVVECPKEAGWVVKDG 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KPCAEGRYSLGTGIRFDEWDELPHGFA--SLSANMELDDSAAES-TGNC-TSSKWVPRGD 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTDQDYEFTYTNCDENGERWRVAVPRGGMQCSNLPTPRRGLNCSFSCEPGHYLDLDSQHC 84
                                                                                                                                                                                                                                                        DKDYFYTHTACDANGETQLMYKWAKPKICSEDLEGAVKLPASGVKTHCPPCNPGFFKTNN 391
                                                                                                                                                                                                                                                                                            TRQCTACPPGT-SSPGGSAECIPCSPGSFSSKGSGQCGRCPESQYSGFKSEKCIDRPPCR 323
                                                                                                                                                                                                                                                                                                                                                                  LKYTKKEKDEEEKNGDWRKRRIELKSGANVISWIIQNNMGYQASNQPIHIDRIDVLGLAF
                                                                                                          YKGMTGWEVAGDHIYTAAGAS-DNDFMILTLYVPGF-RPPQSYMADTENKEVARITFVFE 502
                                                                                                                                                                                  STCQPCPYGSYSNGSDCTRCPAGTEPAVGFEYKWWNTLPTNMET-----TVLSGINFE 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               297;
                                                                           ----DAWIPSGDSLISAPSLELGIAFELILSIDEGFWNPLAPKPSKTMKVPVAQVTIVFE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative 175; Mismatches 436; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21.9%; Score 1203.5; 29.9%; Pred. No. 3.66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6EB4094722B707E7 CRC64;
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ACCOMPAND TO DRANGE TO DRA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAR-2001 (TrEMBLrel. 16, 01-MAR-2001 (TrEMBLrel. 16, 01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9ES77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   616 YMHEVTKLCVSCPLNTIINVTSSRVGVKSCVPCGQGLTSNDGVSCTAMGKIQLNQGIGGK 675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          610 YIDRDSGTCHSCPPNTILK-AHQPYGVQACVPCGPG-TKNNKIHSLCYNDCTFSRNTPTR 667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=20517255; PubMed=11062057; Gilges D., Vinit M.-A., Callebaut I., Coulombel L., Cacheux V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9ES77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Polydom protein precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              832 LPGTCSDGTCDGCNFHFLWESAAACPLCSVADYHAIVSSCVAGIQKTTYVWREPKLCSGG 891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     786 NSSLSDEVLEYDSHDNTSHPLDVFFWFEPVSTISPACPNGNQLVVVARCVPTKK-QMEMR 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Polydom : a secreted protein with pentraxin, complement control protein, epidermal growth factor and von willebrand factor A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=C3H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               961
                           Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AF206329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  domains."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Romeo P.-H., Vigon I.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                         Pfam;
                                                                                     Pfam;
                                                                                                                   Ptam;
                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                     MGD; MGI:1928849; Polydom.
                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP; P00740;
                                                                                                                                           InterPro;
                                                                                                                                                                       InterPro;
                                                                                                                                                                                                  InterPro;
                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                 [nterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RSGVSSGDDK-ISDETRIYAINVTNVGHRGGQGGGASQCLTCPHTAG--GETCVPCPAGN 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RTTFHEASRKYTNDVAKIYSINVTNV-----MNGVASYCRPCALEASDVGSSCTSCPAGY 609
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GNDSSFTYDFSPFVGRSWNISGVRVFSREGAAYYHFFSVSLFPPNIKCQEQ-----FD 728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GITSPAELFHLES----LGIP-DVIFFYRS-NDVTQSCSSGRSTTIRVRCSPQKTVPGSLL 831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NVTDLRIPEGESGFSKSITAYVCQAVIIPPEVTGYKAGVSSQPVSLADRLIGVTTDMTLD 776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -GELPAVETCGLDEDEDDDELQDRVIFSKGRRS 992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AS--QSKEVACSAFTAFQRAILSILVLSMIFLSIGFVCICRRNRRLEYKYTRLIESHT--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ISLPEQRVTICKTIDFWLKVGISAGTCTAILLTVLTCYFWKKNQKLEYKYSKLVMNATLK 951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LPHNCPDGTCDGCLFVIIMETAQACPVCESNDYETINGECLNGKQTIHSIPKKHCVITGA 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DCDLPAADSCAIMEGED --- VEDDLIFTSKNHS 981
PF00084;
PF00092;
                                                                                        PF02494; HYR;
                                                         PF00354;
                                                                                                                   PF00008;
                                                                                                                                                                                                                          | IPR000152; Asx_hydroxyl.
| IPR000561; EGF-like.
| IPR000742; EGF_2.
| IPR001881; EGF_Ca.
| IPR001881; EGF_II.
| IPR001410; Hyalin.
                                                                                                                                              IPR002035;
                                                                                                                                                                             IPR000436; Sushi_SCR_CCP.
                                                                                                                                                                                                        IPR001759;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /HENSIC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          352:49-59(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                      1EDM.
                              pentaxin; 1. sushi; 33.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAG32160.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chordata; Craniata; Vertebrata; Euteleostomi; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                 VWF_A.
                                                                                                                                                                                                        Pentaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
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                                           1318 NAVCK-DQVGGFSCKCPPGFLGTRCEKNVDECLSQPCQNGATCKDG---
                                                                                                          1272 CISSPCLNKGTCTDGLASY------RCT-CVKGYMGVHCETDVNECQSSPCLN 1317
                                                                                                                                                                                                                                            1199 NPCHNSGTCQQLGRGYYCLCPPGY---TGLKCETDIDECSSLPCLNGGICRDQYGGFTCE 1255
                                                                                                                                                                                                                                                                                                             1144 -FYGTTTITGATSITDCSSFS----STFSAAEESIVPLVAPGHSQNKYEVSSQVFHECFL 1198
        678 NTVTLAGGPSFTSKGLKYFHHFTLSL--C-GNQGRKMSVCTDNVTDLRIPEGESGFSKSI 734
                                                                                                                                                                                                                                                                                                                                                                                                                                           1052 KAQCKQGTYSSSGLETCESCPLGTYQPEFGSR-SCLLCPETTTTVK------RGA 1099
                                                                         624 NTILKAHQPYGVQA-CVPCGPGTKNNK-----IHSLCYNDCTFSRNTPTRTFNYNFSALA 677
                                                                                                                                          569 VAKIYSINVTNVMNGVASYCRPCALEASDVGSSCTSCPAGY---YIDRDSGTCHS--CPP 623
                                                                                                                                                                                                           509 CELYFMYGYNSRTNTPYETWKGSKGKQSYTYIIEENTTTSFTWAFQRTTFHEASRKYTND 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProDom; PD002153; Pentaxin; 1.
SMART; SM00032; CCP; 34.
SMART; SM00181; EGF; 15.
SMART; SM00179; EGF_CA; 9.
SMART; SM00001; EGF_like; 3.
                                                                                                                                                                                                                                                                                                                                                                                                            368 VKLPASGVKTHCPPCNPGFFKTNNST-CQPCP---YGSYSNGSDCTRCPAGTEPAVGFEY 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS00010; ASX_HYDROXYL; 5.
PROSITE; PS00022; EGF_1; UNKNOWN_9.
PROSITE; PS01186; EGF_2; 11.
PROSITE; PS01187; EGF_CA; 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           992 VLRGRMCVNCPLGTSYSLEHSTCESCLMGSYQDEEGQLECKLCPPRTHTEYLHSRSVSEC 1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           199
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         846
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            795 HGFKSFEMLYKTTRCDDMDLFKKFSAAFETTLGNMVP-----SF-CNDADDIDCRLE 845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS50234; VWFA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SMART;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PR00010; EGFBLOOD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47 HACKESEYHYEYTACDSTGSRWRVAVPHTPGLCTSLPDPVKGTECSFSCNAGEFLD--MK 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                             KWWNTLPINMETTVLSGINFEYKGMTGWEVAGDHI--YTAAGASDNDFMI------ 471
                                                                                                                                                                                                                                                                              VDISACGV-----PCPVGEFSRSGLTPCYPCPRDYYQPNAGKSFCLACP------ 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H-QCDPDKYSEKGSSSCNVRPACTDKDYFYTHTACDANGETQLMYKWAKPKICSEDLEGA 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VLVRNIAIT----GVAYT----SECFPCKPGTYADKQGSSFCKLCPANSYS----NKGETSC 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---FQLASETVVADSNSLE-----TEKAF-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIIFEFFVQNDQCQPNADDSRWMKTTEKGWEFHSVELNRGNNVLYWRTTAFSVWTKVPKP 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VPLSDPKIQLIFNITASVPLPEERNDTLELENQQRLIKTLETITNRLKSTLNKEPMYS-- 963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MELDDSAAESTGNCTSSKWVP--RGDYIAFNTDECTATLMYAVNLKQSGTVNFEYYYPDS 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DLTKKYCIEYNYNYENGFAIGPGGWGAGNRLDYSYDHFLDVVQETPTDVGKARSSRIKRT 905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DQSCKPCAEGRYSL-----GTGIRFD-EWD-----ELPHGF-----ASLSAN 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SM00159; PTX; 1.
SM00327; VWA; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PR00895;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PR00453; VWFADOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3567 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                 ------GYSGQ-----ICEEN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PENTAXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.2%; Score 230.5; DB 11; Length 3567; 20.4%; Pred. No. 4.5e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     387391 MW;
99; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8FBA8276E12293E5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300;
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Db
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                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                             Matches 151;
                                                                                                                                                                                                                                                                                                                                                                                                       SMART; SM00181; EGF; 1.
SMART; SM00001; EGF_like; 3.
SMART; SM00261; FU; 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Identification of a subset of tsa417-like genes within the variant-specific surface protein (VSP) gene family of Giardia intestinalis."; Submitted (FEB-1997) to the EMBL/GenBank/DDBJ databases.
EMBL; AF065168; AAD04339.1; -...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        097444;
01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-UN-2002 (TrEMBLrel. 21, Last annotation update)
Variant-specific surface protein 417-4 (Variant-specific surface protein type 4 TSP11/TSA417-like).
           276
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF03302; VSP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR002174; Furin-like.
InterPro; IPR005127; Giardia_VSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ey P.L., Darby J.M., Mayrhofer G.; "A new locus (vsp417-4/A-I) belonging to a subfamily of tsa417-like variant-specific surface protein (VSP) genes in Giardia intestinalis.";
                                                                                                                                       187
                                                                                                                                                                                                   145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000561; EGF-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-VARIOUS STRAINS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 476-705 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=AD-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Giardia lamblia (Giardia intestinalis).
Eukaryota; Diplomonadida; Hexamitidae; Giardiinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=5741;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1402 NSYSCKC---QPGFSGHRC-ETEQPSGFNLDFEVSGIYGYVLLDGV------LPTLHA 1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64 TGSRWRVAVPHTPGLCTSLPDPVKGTECSFSCNAGEFLDMK--DQSCKPCAEGRY----- 116
                                                                                                                                                                                                                                                                 99
                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           793 PDVIFFYRSNDV 804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 735 TAYYCQAVIIPPEVTGYKAGVSSQP--VSLADRLIGVTTDMTLDGITSPAELFHLESLGI 792
                                                                                                                                                                                                                                                                                     4 PGHSHHLSARVRGRTERRIPRLWRLLLWAGTAFQVTQGTGPELHACKESEYHYEYTACDS 63
                               KGWEFHSVELNRGNNVLYWRTTAFSVWTKVPKPVLVRNIAI----TGVAYTSECFPC
                                                             --KCTKCTDNNYLKTTSEGT------SCVQKDQCKDGFFPKDDS-----
                                                                                           TDECT-ATLMYAVNLKQSGTVNFEYYYPDSSIIFEFFVQNDQCQPN---ADDSRWMKTTE
                                                                                                                           CVDKAQCDSGSTNKFVAVDDSENGNKCVSCSDNLNGGVA----NCDTCSYDEQSKKI---
                                                                                                                                                         -----SLGTGIRFDEWDELPHGFASLSANMELDDSAAESTGNCTSSKWVPRGDYIAFN 169
                                                                                                                                                                                                                                                       PGHSLCLSSDGDGVCTEAAPGYFLNPLRANTKDSVV-----SCSDT-----TGFTD 144
                                                                                                                                                                                                   SGKTYR----
                                                                                                                                                                                                                                                                                                                                                                                        709 AA;
                                                                                                                                                                                                                                                                                                                          Conservative
---SAGNKCLPCNDSTDG------IANCATCALVSGRSGAALVT-CSAC
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                                                                                                                                                                                                                                                                                                                                                                     5.
72664 MW; 6E71F27D2F367F52 CRC64;
                                                                                                                                                                                                                                                                                                                                      3.8%; Score 211; DB 5; 20.7%; Pred. No. 1.9e-08;
                                                                                                                                                                                           -----GVQYCERCDGAALTDAAGGDAKCTRCGQDKYLKDNT
                                                                                                                                                                                                                                                                                                                          65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                      Mismatches 273; Indels 242;
                                                                                                                                                                                                                                                                                                                                                   Length 709;
                                                                                                                                                                                                                                                                                                                   Gaps
   314
                                 278
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                                                                                                   Matches 159; Conservative
                                                                                                                                   Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   332 DKDYFYTHTACDANGETQLMYKWAKPKICSEDLEGAVKLPASGVKT-----HCPPCNPGF 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9U019;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Variant specific surface protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        412 YK-NGDACSPCHESCKTCSAGTASDCTECPTG------KALR 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     372 KIGNYY------GATE-----GAKKICKE-----CTAANCKTCDGQGQCQACSDGF 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          443 FEYKGMTGWEVAGDHIYTAAGASDNDFMILTLVVPGFR------PPQSVMADTEN 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               503 RAAATCKAGSVAKGMON-SCTNGFLRMNGGCYETTKFPGKNVCEEAAPAGDTCQTPADGY 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              492 KEVA--RITEVFETLCSVNCELYEM--------VGVNSRTNTPVETW 528
                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Giardia lamblia (Giardia intestinalis).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9U019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     602 VPCATGCSECNADDATKCTVCAAGYYLSKEK--CIACDKS---DGGSITGVANCANCAPP 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     589 RPCALEAS----DVGSSCTSCPAGYYIDRDSGTCHSCPPNTILKAHQPYGVQACVPCGPG 644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   562 KLNNG-----TGGNTKKC 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                529 KGSKGKQSYTYIIEENTTTSFTWAFQRTTFHEASRKYTNDVAKIYSINVTNVMNGVASYC 588
                                                                                                                                                                                                             Interpro; IPR000561; EGF like.
Interpro; IPR002174; Furin-like.
Interpro; IPR005127; Giardia_VSP.
Pfam; PF03302; VSP; 2.
                                                                                                                                                                                                                                                                                                                                                                       STRAIN-BRIS-136;
                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=5741;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        645 TKNNKIHSLCY 655
                                                                                                                                                                                                                                                                            Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases EMBL; AF067148; AAF21772.1; -.
                                                                                                                                                                                                                                                                                                                        variant-specific surface protein (vsp) genes in Giardia
                                                                                                                                                                                                                                                                                                                                         "A new locus (vsp417-7) belonging to the subfamily of tsa417-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             657 T-NNKGPVLCY 666
                                                                                                                                                                                   SMART; SM00181; EGF;
SMART; SM00261; FU;
                                                                                                                                                                    SEQUENCE
                                          128 TAATKPSVISCS------DKTG---LLITAHT-----YKGVEFCEECSGS 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TDGYKPSADKTTCEAVSNCKTPGCKACSNEGKENEVCTDCDSSTYLTPTSQCID----SCA 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FKTNNSTCQPCPYG----SYSNGSDCTRCPAGTEPAVGFEYKWWNTLPTNMETTVLSGIN 442
           95 ------CNAGEFLDMKDQSC----KPCAEGRYSLGTGIRFDEWDELPHGFAS 136
                                                                      39 TQGTGPELHACKESEVHYEYTACDSTGSRWRVAVPHTPGLCTSLPDPVKGT----ECSFS 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YGDDGTKGTCGAGCATGTGAGACKT----CGLTIDGASYCSECATATEYPQNGVCSSTTV 502
                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                          Darby J.M.;
                                                                                                                                                                   719 AA; 73874 MW; E409450249E3F716 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Diplomonadida; Hexamitidae; Giardiinae; Giardia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
-- ::- = :-
                                                                                                                            3.8%;
22.1%;
                                                                                                                                                                                                      ب
                                                                                                             66; Mismatches
                                                                                                                                             Score 208.5;
                                                                                                                               Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                               No. 3.1e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          719 AA.
                                                                                                                                              DB 5; Length 719;
                                                                                                                   217;
                                                                                                                  Indels 279; Gaps
                                                                                                                         46;
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Db
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          137 LSANMELDDSAAESTG-------NCTSSKWVPRGDYI---AFNTDECTATL 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           164 ELTSGQDGTAKCTKCGASKYL--KDNACVDNAEACGKGYFG------KPDAAAG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          178 MYAVNLKQSGTVNFBYYYPDSSIIFEFFVQNDQCQPNADDSRWMKTTEKGWEEPHSVELNR 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           210 NKCIACTDQSGGGATGCAECMYDSNTRKAICTKCTT-----DYLRKKADGTTECVAV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     332 TDKTKCTSTAPPDCPIENCKVC-----SEDKRACEECNSNNY------LTPTRMCI 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       280 GNKCVSCADGAGLAVGADGAWKGVDGCAKCTKPADINT-----PTKCDECKPGYEIS 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       238 GNNVLY-----WRTTAFSVW-----TKVPKPVLVRNIAITGVAYTSECFPCKPG---- 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      282 TYADKQGSSF-----CKLCPANSYSNKGETSCHQCDPDKYSEKGSSSCNVRPA--CT 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    377 DDCKKIGNYYYT-----TNANNKLICKECAVANCKE------CENTGT-CKTCDDGF 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    332 DK-----DYFYTHTACDANGETQLMYKWAKPKICSEDLEGAVKLPASGVKTHCPPCNPGF 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  422 YKSSBECKACDSNCKTCNGGT---SADCTKCLSG------AVLKY 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   387 FKTN-----NSTCQPCPYGSYSNGSDCTRCPAGTEPAVGEEYKWWNTLPTNMETTVLSG 440
                                                                                                                                                                                                                                                                                                                      01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               515 AATCKAGSVAKGMCNSCTNGFLRMNGGCYETTKFP-----GKS----VCEEAASAGD 562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              494 VA--RITEVEETLCS--VNCELYFMVGVNSRTNTPVETWKGSKGKQSYTYIIEENTTTSF 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 458 GNDGTKGTCG---AGCATGTGAGACKTCGLIIDGTSYCSECAVETEYPQGGVCSSTTVRA 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                441 INFEYKGMTGWEVAGDHIYTAAGASDNDFMIL-----TLVVPGFRPPQSVMADTENKE 493
                                                                                                                                                                                                                                                 Entamoeba histolytica.
Eukaryota; Entamoebidae; Entamoeba.
                                                                                                                                                                                                                                                                                                                                                                                           Q964D2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             598 VGS--SCTSCPAGYYIDRDSG-TCHSCPPNTILKAHQPYGVQACVPCGPGTKNNKIHSLC 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               550 TWAFQRTTEHEASRKYTNDV-----AKIYSINV--TNVMNG---VASYCRPCALE-ASD 597
                                                                                                                                                                                                                                                                                                         Gal/GalNAc lectin Igl1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              619 TGSTTACDTCSTGYY---ESGTTCVSCTESNSDKTIT--GVANCASCAP-PLNNKGSVLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                655 Y 655
Infect. Immun. 69:5892-5898(2001).
EMBL; AF337950; AAK92361.1; -
InterPro; IPR000561; EGF-like.
PROSITE; PS01186; EGF_2; UNKNOWN_1.
                                                                               "Intermediate Subunit of the Gal/GalNAc Lectin of Entamoeba histolytica Is a Member of a Gene Family Containing Multiple CXXC
                                                                                                                               Cheng X.J., Hughes M.A., Huston C.D., Loftus B., Gilchrist C.A. Lockhart L.A., Ghosh S., Miller-Sims V., Mann B.J., Petri W.A.
                                                                                                                                                                 MEDLINE=21391855; PubMed=11500468;
                                                                                                                                                                                     STRAIN=HM1:IMSS
                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                    NCBI_TaxID=5759;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               673 Y 673
                                                               Sequence Motifs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCQKEAPGYH----LUNNDLYTCSPGCKTCTSNTVCTACMEGYVKTSDSCAKCAAGCATC 618
                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----TQKGF-YKVVDSTN 279
                                                                                                                                                                                                                                                                                                                                                                                                      1101 AA.
                                                                                                                                                               Loftus B., Gilchrist C.A.,
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Matches Query Match

SEQUENCE

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810 ------ SGRS-----TTIRVRCSPOKTVPGSLLLPG------- 835
                                                                                            747 --TCTEORLKDIKAPECACPTGTVQLE------NGTCQSCSDLSKYPGCKKTD 791
                                                                                                                                   767 IGVTTDMTLDGITS-----PAELFHLESLGIPDVIFFYRSNDVTQSCS------- 809
                                                                                                                                                                           707 VCKDGFYQIENATD------GVYCSPC-----PAKCKTCKYNTTSKKVECV--- 746
                                                                                                                                                                                                                   713 VCTD-----NVTDLRIPEGESGFSKSTTAYVCQAVIIPPEVTGYKAGVSSQPVSLADRL 766
                                                                                                                                                                                                                                                            649 QVGACTQCSPNAFKDENNKCQLCSTKQSQYGHCAACSATACITCEDINLILTGE--KPCT 706
                                                                                                                                                                                                                                                                                                    676 LANTVTLAGGPSF-----TSKGLKYFH-----HFTLSLCGNQGRKMS 712
                                                                                                                                                                                                                                                                                                                                         589 NKENECACINDGYKEGPNAEDKKKSCAQLNNNCKKEGKYEISDGFVTCLDCDDSAYIVGS 648
                                                                                                                                                                                                                                                                                                                                                                                   647 NNKIHSLCYND-----A 675
                                                                                                                                                                                                                                                                                                                                                                                                                         530 VGSHVGKDGKCSCGDAHYFDKDN-VCKKCPASCSSCSYDSSKSKVVCSECYENIQGVTTR 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                607 AG------GPGTK 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          475 TIGCVGQLRNVSNDCE---CNDKHIPTSIDKASDCVSITTKLPSCERTAN--GNICTQCP 529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         441 ----NAFKASDNTYYCPLKDLYLPYYFSV------TKG-----TKG-----TSDNTI 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 487 ADTENKEVARITFVFETLCSVNCELYFMVGVNSRTNTPVETWKGSKGKQSYTYIIEENTT 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        383 PGCLLCSDDDTICYKCENGLTLNGTHCYNFDTKSVLGTSGNNHQVCKM--RGYDQYEQYL 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                443 -----FEYKGMTGWEVAGDHIY-----TAAGASDNDFMILTLVVPGFRPPQSVM 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       332 NGYYLEKDGDKKRCSLCPDPFTECLTSKTPVPG------KLNLRSSHLTSTDGPCKL 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               409 -----TRCPAGTEPAVGFEYKWWNTLPTNMETTVLSGIN----- 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       296 -----ENKCTKCDNGYFLTTSGTCSPNLYDGFKTANRTECE 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              352 YKWAKPKICSEDLEGAVKLPASGVKTHCPPCNPGFFKTNNSTCQPCPYGSY--SNGSDC- 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    244 CTICTVDNPNNLSEG--NEC--SIYNAEHCTSCNKR--CTVSDGVCVKNHCRLFSPTE-- 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           292 CKLCPANSYSNKGETSCHOCDPDKYSEKGSSSCNVRPACTDKDYFYTHTACDANGETOLM 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   232 SVELNRGNNVLYWRTTAFSVWTKVPKPVLVRNIAITGVAYTSECFPCKPGTVADKQGSSF 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                171 --MYSLOGGKCTQKNDKIN------KCILQVENSCNQCADGYSLSTDKKSCNKFPE-H 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       176 TLMYAVN----LKQSGTVNFEYYYPDSSIIFEFFVQNDQCQPNADDSRWMKTTEKGWEFH 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               134 VDG------SKLCDNATTEDHAENCVGLLASSTSSK-----TCDKCFG 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         119 GTGIRFDEWDELPHGFASLSANMELDDSAAESTG---NCTSSKWVPRGDYIAFNTDECTA 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                74 DKTNSTNPKCTYCVNGKEVNTSSHSGNDKCVCKNNVNICESCLLMKDSKCGECIIGMSTT 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84 DPVKGT--ECSFSCNAGEF------118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14 DYTADKLIGGKEPREAVPHCASVSNGACTSCDTGYELTTTGNNKTCTLKEDMCKTAFSYY 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       57 EYTACDSTGSRW-RVAVPH----TPGLCTSLP-------83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match 3.8%; Score 208.5; DB 5; Length 1101; Local Similarity 18.5%; Pred. No. 5.6e-08; les 229; Conservative 113; Mismatches 396; Indels 501; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TSFTWAFQRTTFHEASRKYTNDVAKTYSINVTNVMNGVASYCRPCALEASDVGSSCTSCP 606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1101 AA; 119512 MW; C8B6F5CBDE656AEC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61;
                            DЬ
                                                                                                         В
                                                                                                                                                 Qy
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                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 149; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ъ
215 GDVTTGVASCEKCTPPSP-----DQAKPACTKCGGNNYLKTAADGTTTCAEQSACSPDSF 269
                                                                                 174 KC-TRCGENKYLATTGTCGEGCTPDTEFSKEDSDNG------KRCFAC 214
                                         263 NIAITGVAYTSECFPCKPGTYADKQGSSFCKLCPANSY---SNKGETSCHQ----CDPDKY 316
                                                                                                                        210 OCQPNADDSRWMKTT-----EKGWEFHSVELNRGNNVLYWRTTAFSVWTKVPKPVLVR 262
                                                                                                                                                                114 VCTEAAPGYFLNPLRANTKDSVVSCSDTAGFTDSGKTYRGVQYCERCDGAVLFDAAGGDA 173
                                                                                                                                                                                                        153 NCTSSKWVPRGDYIAFNTDECTATLMYAVNLKQSGTVNFEYYY---PDSSIIFEFFVQND 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS; PR00290; KAZ
SMART; SM00261; FU;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR005127; Giardia_vsp. InterPro; IPR001239; Kazal_inhib. Pfam; PF03302; VsP; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Glardia intestinalis: conservation of the variant-specific surface protein VSp417-1 (TSA417) and identification of a divergent homologue encoded at a duplicated locus in genetic group II isolates.";
                                                                                                                                                                                                                                                                                       104 ---KDQ-SCKPC-----AEGRYSLGTGIRFDEWDELPHGFASLSANMELDDSAAESTG 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9XTJ7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EXP. Parasitol. 90:250-261(1998).
EMBL; U89266; AAD03483.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Giardia lamblia (Giardia intestinalis)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                               71 CPAKDOGKCTOCGGNSFMLAGGCYSSGEG-----LPGHSLCLSSG-----GDG 113
                                                                                                                                                                                                                                                                                                                              18 ACQADGS------GSAGSCKTCGVAIGQEQYCSECNGANYAPVNGQCADVNAEGPSKTL 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ey P.L., Darby J.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=99026095; PubMed=9806870;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=5741;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Diplomonadida; Hexamitidae; Giardiinae; Giardia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Variant-specific surface protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1019 DCLRCNAEYLEAKGGECVCVEGYYTSSWGSCIPCSRHMP 1057
                                                                                                                                                                                                                                                                                                                                                                      60 ACDSTGSRWRVAVPHTPGLCTSLPDPVKGTECSFSCNA------GEFLDM------ 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    952 DCDLPAADSCAIMEGEDVEDDLIFTSK-NHSLGRSNHLP 989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     968 STKDHIAEVPVN-GAC-----VCAYGYVEGTSTEDNKIECQACKAKVNEFCDSCNSK 1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             903 KTIDFWLKVGISAGTCTAILLTVLTCYFW-----KKNOKLEYKYSKLVMN-----ATLK 951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     908 ISGNGCNSCVDGFYFDEIKGTCIPCTSPCTKCVGVKKDCEEQETGCNSEKKKIVEECTKC 967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              867 I----VSSCVAG-----IQKTTYVWREP-KLCSG------GISLPEQRV----TIC 902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    848 CSDKDTCLTCADPLKVGSKCDGCKTGYYMSNGECKPCTNHCSECSSAABCTVCESDTYKV 907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           836 CSD-----ESAAACPLCSVADYHA 866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   792 SCNVDSRTGFIYATECSDGFSGRSPYSNCTT----CTKSNYYPKEGEKNGCAKCDDKCAT 847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IPR002174; Furin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   709 AA; 71516 MW; 3512BB844B38D134 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KAZALINHBTR.
                                                                                                                                                                                                                                                                                                                                                                                                           3.8%; Score 207; DB 5; Length 709;
20.1%; Pred. No. 4e-08;
1tive 70; Mismatches 280; Indels 244; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                               Query Match
Best Local Similarity
Matches 165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 371 -PASGYKT-----HCPPCNPGFFKTNNSTCQPCPYG----SYSNGSDCTRCPAGTEPAVG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    330 VSSCKTPGCKACSNEGKENEVCTDCDGSTYLTPTSQCTDSCAKVGNYYGAIEGAKKLCKE 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     270 PVENSQSGNRCVLCGDAANGGVDKCAACTPADKGRAAPAVTCTACTDGYKPSADKTTCEA 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     317 SEKGSSSCN------VRPACTDKDY----FYTHTAC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q90ZN3 PRELIMINARY; PKT; 1007 AA.

Q90ZN3;
01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421 FEYKWWNTLPTNMETTVLSGINFEYKGMTGWEVAGDHIYTAAGASDNDFMILTLVVPGFR 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Laminin gamma 1 (Fragment).
Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           580 VMNGV---ASYCRPCALE---ASDVGSSCTSCPAGYY-IDRDSGTCHSCPPNTILKAHQP 632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481 YCSECATATEYPONGVCAPKASRATPTCNDSPIQNGVCGTCANSYFKMNGGCYETVKYPG 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481 -----PPQSVMADTENK--EVARITEVEETLCSVNCELYEMV--GVNSRTNTPV 525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           642 TGIKGCLNCAPPSSNTG-SVLCY 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            586 CLDGYVKSASACTKCDFSCETCNGAATTCKACATGYYKTASGEGACTSCESD----SNGV 641
                                                                                                                                                                                                                                                                                                 Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases EMBL; AF373841; AAK55397.1; ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          633 YGVQACVPCGPGTKNNKIHSLCY 655
                                                                                                                                                                                                                                              InterPro; IPR004089; Chmtaxis_transd.
InterPro; IPR0000561; EGF-like
InterPro; IPR000034; Laminin_B.
                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9031;
                                                                                                                pfam; pr00055; laminin_nterm; 1.
pfam; pr00055; laminin_nterm; 1.
pr0site; ps00122; EGF_1; UNKNOWN_2.
pr0site; ps01186; EGF_2; UNKNOWN_2.
pr0site; ps01248; LAMININ_TYPE_EGF; UNKNOWN_9.
                                                                                                                                                                                                                                                                                                                                                  *Aberrant histogenesis after temporary disruption of the retinal basal
                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                             Pfam; PF00052; laminin_B; 1.
Pfam; PF00053; laminin_EGF; 10.
                                                                                                                                                                                                                                  [nterPro; IPR002049; Laminin_EGF
                                                                                                                                                                                                                 nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----QLMYKWAKPKICSEDLEGAVKL--- 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTAANCKTCDGQGRCQTCSDGFYK-NGDACSPCHESCKTCSAGTASDCTECPTG----- 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KTYCISAPNGGTCQKAADGYKLDSGTL-----TYCSEGCKECTS-----STDCTT 585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ETW-----KGSKGKQSYTYIIEENTTTSFTWAFQRTTFHEASRKYTNDVAKIYSINVTN 579
                                                                                                                                                                                                                   IPR001886; LamNT.
                                                                  1007 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                      Dong S., Balasubrmani M., Bier M.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -------KALRYGDDGTKGTCGAG----CATGQGSGACKTCGLTIDGAS 480
Conservative
                                                                                     1007
 3.7%; Score 206; DB 13; Length 1007; 20.6%; Pred. No. 7.8e-08; ative 80; Mismatches 309; Indels 248;
                                                                    110999 MW; CCBFD9659E7931FC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT; 1007 AA.
                                         Length 1007;
                Gaps
                  46;
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Db
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                                                                                                                                                                                                                                                       RESULT 11
Q9U021
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 209 DQCQPNADDSRWMK-TTEKGWEFHSVELNRGNNVLYWRTTAFSVWTKVPKPVLVRNIAIT 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    175 PGVMGEKCDRCQPGFHSLSEAGCRPCSCNPA-----GSTGECNMETGRC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      308 -----CHQCDP--DKYSEKGSSSCNVRPACTDKDYFYTHTACDANGETQLMYKWAKPK 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               268 GVAYTSECFPCK---PGTYADKQGSSF-----CKLCPANSYSNK----GETS-- 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               359 ICSEDLEGAVKLPASGVKTHCPPCNPGFF----KTNNSTCQPCPYGSYSNGSDCTRCPAGT 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           219 TCKDNVEG-----FHCERCKPGFFHLDPSNPRGCTPC--FCFGHSSVCTN---- 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             306 SDSYFFTYFVAPRKFLGNQVLSYGQN-----LTFSFRVDRRDTRLSAEDLVLEGAGLRVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                473 T-----LOVPGERPPQSVMADTENKEVARITEVEET---LCSVNCELYEMVGVNSRTN 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    262 --AVGYSV-----YSITSSFQF---GEDEWHAEQRDGSQVPLQWSSETQDISVI 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          416 EPAVGFEYKWNTLPTNMETTVLSGINFEYKGMTGWEVA---GDHIYTAAGASDNDFMIL 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72 EKCLPFFNDRPWRRATAESANECLPCDCNGRSQECYF------DPELYRS---T 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        621 CPPNTILKAHOPYGVQACVPCGPGTKNNKIHS------LCYNDC---TFSRNTPTRTF 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421 GHLDDV-----TITSAVPGAGVPÄAWVESC------SCPÄGY----EGOFCER 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  564 KYTNDVAKIYSINVTNVMNGV---ASYCRPCALEASDVGSSCTSCPAGYYIDRDSGTCHS 620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361 VPLIAQGNSYPSESPLTYTFRLHEAADYPWRPALSAFDFQKLLHNLTATKIRGTYSERSA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             512 GYYGDATAGTALDCOPCPCPGGSSCAVVPRTKEVVCTSCOTGTTGKRCELCDD--AYFGD 569
                                                                                                                                                                  090021;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          724 PEGESGFSKSITAYVCQAVIIPPEVTGYKAGVSSQPVSLADRLIGVTTDMTLDGI----
STRAIN=AD-1;
Ey P.L., Darby J.M.;
                                                                                         Giardia lamblia (Giardia intestinalis).
Eukaryota; Diplomonadida; Hexamitidae; Giardiinae; Giardia.
                                                                                                                              VSP417-7
                                                                                                                                          Variant-specific surface protein
                                                                                                                                                                                                                                         Q9U021
                                                                                                                                                                                                                                                                                                                                                                                                      655 QVTGQCE-CLSHVTERDCSACEPGEFNLQSGRGCERCDCHALGST----NGQCDIWTGQ 708
                                                                                                                                                                                                                                                                                                                                                                                                                                         838 D--GTCDGCNFHFLWESAAACPL-----CSVADYHAIVSSCVAGIQKTTYVWREP 885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 779 -TSPAELFHLESLGIPDVIFFYRSNDVTQSCSSGRSTTIRVRCSPQKTVPGSLLLPGTCS 837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      570 PLGENGAVRPCRLCQCND-NIDPNAVGNCNRQTGECLKCIYNTAGFYCDRCKDGFFGNPL 628
                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                              709 CECOPGVT--GORCDRCEANHF 728
                                                                                                                                                                                                                                                                                                                                                                    886 KLCSGGISLPEQRVTICKTIDF 907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 629 ATNPA----
                                                                       NCBI_TaxID=5741;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              G--HGGHCMGCRDNTDGAHCERCRDSFYRLGSEEGCLPCSCNPVGSLSTQCDSYGQCSCK 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TPVETWKGSKGKQS-YTYIIEENTTTSFTWA-----FQ------RTTFHEASR 563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CSPG--YRRETP-GLGPYSPCVPCTCNG--HSETCDPETGVC--DCRDNTAGSHCEKCSD 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NYNESALANTV----TLAGGPSFTSKGLKYFHHETLSLCGNQGRKMSVCTDNVTDLRI 723
                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----HCNPYGTVNQQT----SCN 654
                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                     719 AA
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Q96JU7
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Q96JU7;
01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence of the control of the co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                         Q96JU7
                                                                                                                                                                                                                                                                                                                         641 SCTESNSDKTIT--GVANCAXCAP-PLNNKGSVLCY 673
                                                                                                                                                                                                                                                                                                                                                                                             620 SCPPNTILKAHQPYGVQACVPCGPGTKNNKIHSLCY 655
                                                                                                                                                                                                                                                                                                                                                                                                                                                     583 PGCKTCTSNTVCTACMEGYVKTSDSCAKCAAGCATCTGSTTACDTCSTGYY--KSGTTCV 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      570 --AKIYSINV--TNVMNG---VASYCRPCALE-ASDVGS--SCTSCPAGYYIDRDSGTCH 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             539 NGGCYETTKFP-----GKS----VCEEAASAGDTCQKEAPGYH----LNNNDLVTCS 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 514 MVGVNSRTNTPVETWKGSKGKQSYTYIIEENTTTSFTWAFQRTTFHEASRKYTNDV---- 569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         479 CKTCGLIIDGTSYCSECAVETEYPQGGVCSSTTVRAAATCKAGSVAKGMCNSCTNGFLRM 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             465 SDNDFMIL-----TLVVPGFRPPQSVMADTENKEVA--RITFVFETICS--VNCELYF 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 443 SADCTKCLSG------AGCATGTGAGA 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR000561; EGF-like.
InterPro; IPR002174; Furin-like.
InterPro; IPR002174; Furin-like.
InterPro; IPR005127; Giardia_VSP.
Pfam; PF03302; VSP; 2.
SMART; SM00181; EGF; 2.
SMART; SM00001; EGF_like; 1.
SMART; SM00261; FU; 4.
SEQUENCE 719 AA; 73888 MW; 83BE706BACE7F977 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     405 GSDCTRCPAGTEPAVGFEYKWWNTLPTNMETTVLSGINFEYKGMTGWEVAGDHIYTAAGA 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         396 ICKECAVANCKE------CENTGT-CKTCDDGFYKSSEECKACDSNCKTCNGGT--- 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             351 MYKWAKPKICSEDLEGAVKLPASGVKTHCPPCNPGFFKTN-----NSTCQPCPYGSYSN 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     354 ----SEDKRACEECNSNNY------LTPTRMCIDDCKKIGNYYYT-----SNANNKL 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     298 NSYSNKGETSCHQCDPDKYSEKGSSSCNVRPA--CTDK-----DYFYTHTACDANGETQL 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         304 DGCAKCIKPADINT------PTKCDECKPGYEISTDKTKCTSTAPPDCPIENCKYC-- 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 190 NFEYYYPDSSIIFEFFVQNDQCQPNADDSRWMKTTEKGWEFHSVELNRGNNVLYWRTTAF 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 269 KGFYKVVDST-----NGNKCVSCADGAGLAVGTDGAWK------GV 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         133 GFASLSANMELDDSAAESTGNCTSSKWVPRGDYI---AFNTDECTATLMYAVNLKQSGTV 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Comparative analysis of the VSP417 subfamily of variant-specific proteins in Giardia intestinalis."; Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases. EMBL; AF189719; AAF04387.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                164 ELTSGODGTAKCTKCGASKYL--KDNACVDNAEACGKGYFGKPDAAAGNKCIACTDQSDG 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128 TAATKPSVISCS------DKTG---LLITAHT-----YKGVEFCEECSGS 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95 -----CNAGEFLDMKDQSC----KPCAEGRYSLGTGIRFDE----WDELPH 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            39 TQGTGPELHACKESEYHYEYTACDSTGSRWRVAVPHTPGLCTSLPDPVKGT----ECSFS 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
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                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
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22.0%; Pred. No. 9.5e-08;
ative 72; Mismatches 242; Indels 229; Gaps
Last sequence update)
Last annotation update)
                                                                                                                                                   PRT; 1316 AA.
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    944 PASLGHIKKRHEISSQVFHECFFNPCHNSGTCQQLGRGYVCLCPLGY-TGLKCETDIDEC 1002
                                   482 PQSVMADTENKEVARITF--VFETLCSVN-------CELYFMVGVNSRTN---- 522
                                                                      921 -----SRSITECSSFS-------STFSAAEES------VV----P
                                                                                                      422 EYKWWNTLPTNMETTVLSGINFEYKGMTGWEVAGDHIYTAAGASDNDFMILTLVVPGFRP 481
                                                                                                                                        867 AVNISACGV-----PCPEGKFSRSGLMPCHPCPRDYYQPNAGKAFCLACPFYGTTPFAG- 920
                                                                                                                                                                         367 AVKLPASGVKTHCPPCNPG-FFKTNNSTCQPCPYGSYSNGSD---CTRCP-AGTEPAVGF 421
                                                                                                                                                                                                             819 CKAQCKQGTYSCSGLETCESCPLGTYQPKFGSRSCLSC------PENTSTVKRG 866
                                                                                                                                                                                                                                              308 CH-QCDPDKYSEKGSSSCNYRPACTDKDYFYTHTACDANGETQLMYKWAKPKICSEDLEG 366
                                                                                                                                                                                                                                                                                759 SVLRGRMCVNCPLGTYYNLEHFTCESCRIGSYQDEEGQLECKLCPSGMYTEYIHSRNISD 818
                                                                                                                                                                                                                                                                                                                  259 -VLVRNIAIT----GVAYTSE---CEPCKPGTYADKQGSSFCKLCPANSYS----NKGETS 307
                                                                                                                                                                                                                                                                                                                                                       703 WENQQRLLQTLETITNKLKRTLNKDPMYSFQL--ASEILI--ADSNSLGTKKASPFCRPG
                                                                                                                                                                                                                                                                                                                                                                                       204 FFVQNDQCQPNADDSRWMKTTEKGWEFHSVELNRGNNVLYWRTTAFSVWTKVPKP---- 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                            157 S---KWVPRGDY---TAFN-----TDECTATLMYAVNLKQSGTVNFEYYYPDSSIIFE 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               613 ENLTKKYCLEYNYDYENGFAIG-----PGGWGAANRLDYSYDDFLDTVQETATSIGNAKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProDom; PD002153; Pentaxin; 1.
PROSITE; PS00010; ASX_HYDROXYL; UNKNOWN_5.
PROSITE; PS00022; EGE_1; UNKNOWN_6.
PROSITE; PS01186; EGE_2; UNKNOWN_6.
PROSITE; PS01187; EGE_CA; UNKNOWN_5.
SEQUENCE 1316 AA; 144524 MW; 86615BBA3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00008; EGF; 6. Pfam; PF02494; HYR; 2. Pfam; PF00084; sushi; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=PLACENTA;

ISOGAI T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Suzuki Y.,

Nishikawa T., Nagai K., Sugano S., Aotsuka S., Yoshikawa Y.,

Matsunawa H., Ishii S., Kawai Y., Saito K., Yamamoto J., Wakamatsu

Nakamura Y., Nagahari K., Masuho Y., Sasaki N.;

"NEDO human cDNA sequencing project.";

Submitted (MAY-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  562 HGFKSFEMFYKAARCDDTDLMKKFSEAFETTLGKMVP-----SF-CSDAEDIDWRLE 612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             105 -DQSCKPCAEGRYSLGTGIRFDEWDELPHGF-ASLSANMELDD-----SAAESTGNCTS 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                47 HACKESEYHYEYTACDSTGSRWRVAVPHTPGLCTSLPDPVKGTECSFSCNAGEFLDMK-- 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (Human).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDNA FLJ14964 fis, clone PLACE4000581, moderately similar to fibropellin I precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Match 3.6%; Score 200.5; DB 4; Length 1316; Local Similarity 20.6%; Pred. No. 3.2e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                          197; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           144524 MW; 80615BBA3A4F00A5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98; Mismatches 341; Indels 321; Gaps
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RESULT 13
QRT3A DR GRT3A
ID QRT3A
ID QRT3A
C Caeno
C Caeno
C Caeno
C CAENCA
C Rhabó
C NCBIL
RN [1]
RP SEQUE
RA Harri
RL Submi
RN [2]
RP SEQUE
RA none;
RT "Genone
RT Scier
SQ SEQUE
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                                                                                                                                                                                                                                                                                 Matches 218;
                                                                                                                                                                                                                                                                                                                   Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-JUN-2002 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1256 ---WYLYVNGREKITNCPSVNDGRWHHIAITWTSANGIWK---VYIDGKLSDGGAGL 1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1170 NSYSCKC---QPGFSGKRCE----TEQSTGFNLDFEVSGTYGYVMLVGMLPSLHAL 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1085 NNAVCEDQVGGFLCKCPPGFLGTRCGKNVDECLSQPCKNGATCKDG------A 1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1037 INECSSSPCLNKGICVDGVAGYRC-----TCVKGFVGLHCETEVNECQSNPCL 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                523 TPV-----ETWKGSKGKQSYTYIIEENTTTSFTWAFQRTTFHEASRKY 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q8T3A6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q8T3A6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Y47H9C.4c protein.
                                                                                                                                                                                                                                                                                                                                                                               "Genome sequence of the nematode C.elegans: A platform investigating biology."; Science 282:2012-2018(1998). EMBL; AL032657; CAD27615.1; ".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (OCT-1998) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           847 HFLW-----ESAAACPLCSVADYH--AIVSSCVAGIQKTTYVWREPKLCSGGISL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   735 TAYVCQAVIIPPEVTGYKAGVSSQPVSLADRLIGVTTDMTLDGITSPAELF-HLESLGIP 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      794 DVIFFYRSND-----VTQSCSSGRSTTIRVRCSPQKTVPGSLLLPGTCSDGTCDGCNF 846
                                                                                                                                                                                                  224 SDGWGGEFCLNKCEEGKFGAECKFECNCQNGATCDNTNGKC-----ICKS---GYH 271
  169
                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PNTILKAHQPYGVQACVPCGPGTKNNK-----IHSLCYNDCTFSRNTPTRTFNYNFSALA 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NSFRCLCAAGFTGS-----HCELNINECQSNPCRNQATCVD-----EL 1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NTVTLAGGPSFTSKGLKYFHHFTLSL--C-GNQGRKMSVCTDNVTDLRIPEGESGFSKSI 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTFWMKSSDDMNYGTPISYAVDNGSDNT--
                                                                                                                                                                                                                                        TQGTGPE--LHACKESEYHYEY------TACDSTGSRWRVAVPHTPGLCTSLPDPVK 87
                                                                            IRFDEWDELPHGFASLSANMELDDSAAE---STG--NCTSSKWVPRGD------YIAF 168
                                                                                                                   GALCENECSVGFFGSGCTOKCDCLNNQNCDSSSGECKCIGWTGKHCDIGCSRGRF----G 327
                                                                                                                                                         GTECSFSCNAGEF------LDMKDQSCK-----PCAEGRYSLGTG 121
                                      LQCKQNCTCP-----GLEFSDSNASCDAKTGQCQCESGYKGPKCDERKCDAEQYGAD 379
  NTDECTA----TLMYAVNLKQSGTVNFE-YYYPDSSIIFEFFVQNDQCQPNADDSRWMKT 223
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                                                                                                                                                                                                                                                                                                      Score 197.5; DB 5; Length 1045; Pred. No. 4.1e-07;
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Q8T3A7 PRELIMINARY; PRT; 1070 AA. Q8T3A7; Q1-JUN-2002 (TrEMBLrel. 21, Created) 01-JUN-2002 (TrEMBLrel. 21, Last sequence update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation update) Y47H9C.4b protein.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     278 CKPGTYADKQGSSFCKLCPANSYSNKGETSCHQCDPDKYSEKGSSSCNVRPACTDKDYFY 337
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       396 --PCPYGSYSNGSD-----CTRCPAGTEPAVGFEYKWWNTLPTNMETTVLSGINFEYKGM 448
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                                                                                   982 N----GNHQGGPPNGLL 994
                                                                                                                        980 HSLGRSNHL--PPRGLL 994
                                                                                                                                                                                                                                                                                                                                                                                                          ---DGYYGPDCIKKCKCQG------TATSSCNRVSGACHCHPGFTGEFCHALCPE 854
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                                                                                                                                                              -----KYQK-----EKDPDMPTVSFHKAPNNDEGREFQNPLYSRQSVFPDSDAFSSEN 981
                                                                                                                                                                                                     NQKLEYKYSKLVMNATLKDCDLPAADSCAIM---EGEDVEDDL-----IFTSKN 979
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|) 612) 683 | QRTTFHEASRKYINDVAKIYSINVTNVMNGVASYCRPCALEASDVGSSCT-SCPAGYYID | 554 649 613 | |
| 553 | VNCELYFMVGVNSRTNTPVETWKGSKGKQSYTYIIEENTTTSFTWAF:: | 507 601 | |
| 5 506 5 600 | TGWEVAGDHIYTAAGASDNDFMILTLVVPGERPPQSVMADTENKEVARITFVFETLCS | 449 550 | |
| y 448 549 | PCPYGSYSNGSDCTRCPAGTEPAVGFEYKWWNTLPTNMETTVLSGINFEYKGM | 396 517 | |
| - 395 K 516 | THTACD-ANGETQLMYKWAKPKICSEDLEGAVKLPASGVKTHCPPCNPGFFKTNNSTCQ | 338 480 | |
| Y 337 - 479 | CKPGTYADKQGSSFCKLCPANSYSNKGETSCHQCDPDKYSEKGSSSCNVRPACTDKDYF | 278 448 | |
| - 277 V 447 | TEKGWEFHSVELNRGNNVLYWRTTAFSVWTKVPKPVLVRNIAITGVAYTSECFP | 224 429 | |
| T 223 | NTDECTATLMYAVNLKQSGTVNFE-YYYPDSSIIFEFFVQNDQCQPNADDSRWMK | 169 380 | |
| F 168 | 2 IRFDEWDELPHGFASLSANMELDDSAAESTGNCTSSKWVPRGDYIAF :: : | 122 328 | |
| G 121 G 327 | GTECSFSCNAGEFLDMKDQSCK | 88 272 | • • |
| ук 87 ун 271 | TQGTGPELHACKESEYHYEYTACDSTGSRWRVAVPHTPGLCTSLPDE | 39 224 | 0 ~ |
| Gaps | atch 3.6%; Score 197.5; DB 5; Length 1070; cal Similarity 19.9%; Pred. No. 4.2e-07; 218; Conservative 83; Mismatches 329; Indels 467; | Query Ma Best Loo Matches | ¥ B Q |
| | gating biology."; 282:2012-2018(1998). L032657; CAD27614.1; E 1070 AA; 114180 MW; 752 | inve Scie EMBJ SEQU | ح کرد ج |
| | 1916; | SEQI MEDI none | 3 P X 0 |
| | SEQUENCE FROM N.A. SEQUENCE FROM N.A. Submitted (OCT-1998) to the EMBL/GenBank/DDBJ databases. [2] | SEQUENCE Harris Submit: | Z L > D : |
| idea; | Caenorhabditis elegans. Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea Rhabditidae; Peloderinae; Caenorhabditis. NCBI_TaxID=6239; | Caeno Euka: Rhabo NCBI | 2 × 0 0 0 |

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          Engulfment in C. elegans.";
Cell 104:43-56(2001).
EMBL; AL032657; CAA21739.1; -.
EMBL; AF332568; AAG60061.1; -.
HSSP; PD5106; 1JV2.
InterPro; IPR000561; EGF-like.
InterPro; IPR002049; Laminin_EGF.
InterPro; IPR002049; Laminin_EGF.
InterPro; IPROC
InterPro; IPROC
InterPro; IPROC
Pfam; PFO0008;
                                                                                                                                                                                                                                                             Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A.,
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fulton L.,
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Lightning J., Lloyd C., Mcmurray A., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen R.
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Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K., Waterston R.,
Watson A., Weinstock L., Wilkinson-Sproat J., Wohldman P.;
"2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
                                                                                                                                               MEDLINE=21097720; PubMed=11163239;
Zhou Z., Hartwieg E., Horvitz H.R.;
"CED-1 is a Transmembrane Receptor that Mediates Cell Corpse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Y47H9C.4 protein (CED-1).
Y47H9C.4 OR CED-1.
Caenorhabditis elegans.
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditidae; Peloderinae; Caenorhabditis.
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Q9XWD6;
01-NOV-1999
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                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                           Nature 368:32-38(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=94150718; PubMed=7906398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS; PRO0011; EGFLAMININ.
SMART; SM00180; EGF_LAM; 6.
SMART; SM00001; EGF_like; 5.
SMART; SM00001; EGF_like; 5.
SMART; SM00261; FU; 2.
PROSITE; PS00022; EGF_l; UNKNOWN_15.
PROSITE; PS01186; EGF_2; 11.
EGF-like domain; Glycoprotein.
SEQUENCE 1111 AA; 118803 MW; A39F3
   809
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                278 CKPGTYADKQGSSFCKLCPANSYSNKGETSCHQCDPDKYSEKGSSSCNVRPACTDKDYFY 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 272 GALCENECSVGFFGSGCTQKCDCLNNQNCDSSSGECKCIGWTGKHCDIGCSRGRF----G 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          224 SDGWGGEFCLNKCEEGKFGAECKFECNCQNGATCDNTNGKC-----ICKS---GYH 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                39 TQGTGPE--LHACKESEYHYEY-----TACDSTGSRWRVAVPHTPGLCTSLPDPVK
---DGYYGPDCIKKCKCQG------TATSSCNRVSGACHCHPGFTGEFCHALCPE
                                                                                                                                                  KYGYGCALDCPKCASGSTCDHINGLCICPAGLEG-----ALCTRPCSAGFWGNGCRQVC
                                                                                                                                                                                                                                                                                                                                            QRTTFHEASRKYTNDVAKIYSINVTNVMNGVASYCRPCALEASDVGSSCT-SCPAGYYID
                                                                                                                                                                                                                                                                                                                                                                                                       VNCELYFMVGVNSRTNTPVETWK-----GSKG------KQSYTYIIEENTTTSFTWAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CSKTCTCVRENTLMCAPN---TGFCRCKPGFYGDNC---ELACSKDSYGPNCEKQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NTDECTA----TLMYAVNLKQSGTVNFE-YYYPDSSIIFEFFVQNDQCQPNADDSRWMKT
                                     MTLDGITSPAELFHLESLGIPDVIFFYRSNDVTQSCS--SGR-----S
                                                                                                                                                                                       TFNYNFS-----ALANTVTLAGGPSFTSKGLKYFHHFTLSLC------GNQGRKMS
                                                                                                                                                                                                                                                                 RDSGTC-----HSCPPNTILKAHQPYGVQACVPCGPGTKNNKIHSLCYNDCTFSRNTPTR
                                                                                                                                                                                                                                                                                                                                                                               LSCPC----SDASCSKQTGKCLCPLGTKGVSCDQKCDPNTFGFLCQETVTPS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RCKCPKGI---GCDPITGECT-CPAG-------LQGANCDIGCP 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --PCPYGSYSNGSD-----CTRCPAGTEPAVGFEYKWWNTLPTNMETTVLSGINFEYKGM 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CKPG----RTGKNCSEPCPLDFY---GPNCAHQC-----QCNQR-----
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                                                                                                            VCTDNVTDLRIPEGESGFSKSITAYVCQAVIIPPEVTGYKAGVSSQPVSLADRLIGVTTD
                                                                                                                                                                                                                             GCQQVCSCADGHGCDPTT------GECI-CEPG-----YHGKTCSEKCPDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGSYGPGCKLHCKCVNGKCDKETGECT-CQPGFFGSDCSTTCSKGK-----YGESCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGWEVAGD--HIYTAAGASDNDFMILTLYVPGFRPPQSVMADTENKEVARITFVFETLCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     THTACD-ANGETQLMYKWAKPKICSEDLEGAVKLPASGVKTHCPPCNPGFFKTNNSTCQ- 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IRFDEWDELPHGFASLSANMELDDSAAE---STG--NCTSSKWVPRGD-----YIAF 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTECSFSCNAGEF-------LDMKDQSCK------PCAEGRYSLGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -GVGCDGADGKCQCDRGWTGHR-CEH------HCPA-----DTFGANCEK 516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LQCKQNCTCP-----GLEFSDSNASCDAKTGQCQCESGYKGPKCDERKCDAEQYGAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----PCASTDPKNGVCLSCPP----GSSGIHCEHNCPAGSYGD
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                                                                                                                              934 NQKLEYKYSKLYMNATLKDCDLPAADSCAIM---EGEDVEDDL------IFTSKN 979
                                                                                                                                                                                                                    874 GIQKTTYVWREPKLCSGGISLPEQRVTICKTIDFWLKVGISAGTCTAILLTVLTCYFWKK 933
                                                                                                                                                                                                                                                                 855 STFGLKCSKECPKDG------CGDG-----YECDAAIGCC-----HVDQMSC--
                                                                                                                                                                                                                                                                                                          814 TTIRVRCSPQKTVPGSLLLPGTCSDGTCDGCNFHFLWESAAACPLCSVADYHAIVSSCVA 873
                                                                                                                                                                           GKAKQEFEALNGAGRSTGLT------
                                                                                     -----KYQK-----EKDPDMPTVSFHKAPNNDEGREFQNPLYSRQSVFPDSDAFSSEN 981
                                                                                                                                                                         WFFVLLIVALCGGLGLIAL---FYRN 933
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